



# Electrical upgrade pays off for leading Australian manufacturer

**Location:** New South Wales, Australia

**Segment:** Machine Building, Industrial

Qenos is Australia's exclusive manufacturer of polyethylene and a valued supplier of a diverse range of specialty polymers. For almost 60 years Qenos has been a pioneer in Australian manufacturing and processing, establishing a proven track record for workplace safety and operational excellence.

The company employs 700 people across its Sydney and Melbourne operations and contributes more than \$1 billion each year into the Australian economy.

## Increasing operational efficiency and safety

Built more than 50 years ago, Qenos' facility in Botany is a critical part of its operations, running 24 hours a day, 7 days a week. Focusing on future-proofing its infrastructure, Qenos is constantly identifying opportunities to improve safety, operations and maintenance processes.

As part of this, Qenos decided to upgrade one of its motor control centres (MCC), a critical piece of electrical infrastructure that powers part of its production process at the Botany site.

## A turnkey solution

Qenos appointed Eaton xEnergy partner, Dynelec to deliver a turnkey solution for the project which included end-to-end design, manufacture and installation of the MCC upgrade – all within a short timeframe to ensure minimal impact to its site operations.

Dynelec designed and built a customised seven tier Eaton xEnergy board, a low voltage power distribution and motor control enclosure system with a modular platform to allow the assembly of low voltage switchgear and control gear to Australian standards.

The solution complies with the new standard AS/NZS61439 for low-voltage switchgear and control assemblies, incorporating a range of leading Eaton products including:

1. Arc flash safety - The IZMX40 circuit breaker equipped with Eaton's Arcflash Reduction Maintenance System (ARMS) offered a simple and reliable method to reduce fault clearing time and available arc flash energy.
2. Temperature monitoring - In an Australian-first, Dynelec installed Eaton's 'Diagnose' temperature monitoring system which provides around-the-clock Busbar temperature monitoring, system alarms, trending, diagnostics and analysis. Self-powered sensors were installed at critical locations within the MCC, allowing communication to a central monitoring unit that can be accessed either locally or remotely.
3. Motor protection and intelligence - Eaton's intelligent electronic overload relay, the Power Xpert C445, was fitted to each starter in the MCC, providing protection and intelligence for improved efficiency and process control.

Other features involved converting MCC module control voltage from 240 volts to 24 volts, and installing a combined circuit breaker and isolator.

The installation was completed safely, with zero incidents, on-time and on-budget.

## New-look motor control centre

Since upgrading the MCC, Keith Cottrell, Electrical & Instrumentation Engineer at Qenos says the new equipment is working well, achieving the expected safety and operational benefits.

## Easier to conduct maintenance

The modular design allows individual modules to be completely withdrawn from the MCC providing a guaranteed break or disconnection.

"In the event of a faulty part, we now have reduced downtime and better ergonomics for technicians as they can fully withdraw the affected module and conduct maintenance for extended periods on a workbench.

The withdrawable modules also increased availability of the MCC bus bar for our cooling tower and plant chillers, which are critical common area equipment for our Alkathene facility."

The real-time temperature monitoring has also reduced the need to manually monitor the temperature in the MCC.

"Technicians can now use the sensors to remotely monitor the development of hot joints on the bus bar and this assists scheduling outages to perform preventative maintenance on this common area MCC."

## Electrical safety and arc flash prevention

The upgrade has completely eliminated the risk of electrical shock risk and live work exposure when troubleshooting control circuit and the new Arcflash Reduction Maintenance System has greatly improved arc flash electrical safety in the MCC.

"When the ARMS system is active, the electrical arc flash risk downstream of the MCC main air circuit breaker has been reduced from Cat 3 to Cat 0 (as defined in NFPA 70E), allowing technicians to wear standard plant personal protective equipment.

"Arc venting and restricted access to the rear of the MCC was also included in the design. These features avoid any over-pressurisation of the MCC in the event of an arcing fault."

## Ready for the future

With this successful upgrade now complete, Qenos is focused firmly on the future and implementing further maintenance programs to its sites.

"We've been able to prolong machine lifespans and reduce downtime, allowing us to focus more time on the business and our next phase of upgrades to the site."

# EATON

Powering Business Worldwide